

CLAIMS

1. A modular floor comprising:

at least two main beams each having an attachment structure, wherein the attachment structure comprises a first support section, a second support section and a channel that extends between the first and second support sections;

at least one cross beam engaging the main beams to retain the main beams in a substantially stationary position with respect to each other; and

a floor panel having ends, wherein each of the ends have a recess that is shaped substantially complementary to at least a portion of upper surfaces of the first and second sections.
2. The modular floor of claim 1, wherein the first and second support sections define a convex upper surface.
3. The modular floor of claim 1, wherein each of the main beams has a first end and a second end, wherein a bolt is attached to the main beam proximate the first end, and wherein the second end has a locking mechanism.
4. The modular floor of claim 3, wherein the locking mechanism comprises a recess that is adapted to receive the bolt and a locking tooth assembly, wherein the locking tooth assembly is movable between a locking position and an unlocking

position, and wherein the bolt is retained in the recess when the locking tooth assembly is in the locking position.

5. The modular floor of claim 1, wherein each of the main beams has at least one side wall that includes at least one extension, wherein the extension is adapted a portion of an attachment bracket, and wherein the cross beam attaches to the main beam with the attachment bracket.

6. The modular floor of claim 1, wherein each of the main beams includes a support attached to a lower surface thereof.

7. The modular floor of claim 1, wherein the cross beam includes a main section and end sections that are attached to opposite ends of the main section.

8. The modular floor of claim 1, wherein the floor panel comprises:
a floor board;
floor end beams attached to a lower surface of the floor board proximate the ends; and
a floor side beam extending between the floor ends beams.

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9. The modular floor of claim 1, and further comprising a locking mechanism that releasably attaches the floor panel to one of the main beams.

10. The modular floor of claim 9, wherein the locking mechanism threadably engages sides of the channel.
- 5 11. The modular floor of claim 9, wherein the locking mechanism is operably attached to the floor panel so that the locking mechanism is operable from an upper surface of the floor panel.
- 10 12. The modular floor of claim 1, and further comprising at least one leg that extends from the main beam.
13. The modular floor of claim 12, and further comprising a main beam stabilizer that extends between the main beam and the at least one leg.
- 15 14. The modular floor of claim 12, and further comprising a cross beam stabilizer that extends between the cross beam and the at least one leg.
15. A method of assembling a modular floor comprising:
providing at least two main beams, wherein each beam has an attachment
20 structure, wherein the attachment structure comprises a first support section, a second support section and a channel that extends between the first and second support sections;

attaching the at least two main beams with at least one cross beam to retain
the main beams in a substantially stationary relationship with respect
to each other;

attaching a floor panel to upper surfaces of the first and second sections,
5 wherein ends of the floor panel include recesses formed therein that
are shaped substantially complimentary to the upper surfaces of the
first and second sections.

16. The method of claim 15, wherein the first and second support sections define
10 a convex upper surface.

17. The method of claim 15, wherein each of the main beams has a first end and a
second end, wherein a bolt is attached to the main beam proximate the first end, and
wherein the second end has a locking mechanism.

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18. The method of claim 17, and further comprising:
providing a recess on the locking mechanism that is adapted to receive the
bolt;
mounting a locking tooth assembly on the locking mechanism that is movable
20 between a locking position and an unlocking position; and
retaining the bolt in the recess when the locking tooth assembly is in the
locking position.

19. The method of claim 15, wherein each of the main beams has at least one side wall that includes at least one extension, wherein the cross beam is attached to the main beams with an attachment bracket that engages the at least one extension.

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20. The method of claim 15, and further comprising attaching a support to a lower surface of the main beam.

21. The method of claim 15, wherein the cross beam includes a main section and end sections that are attached to opposite ends of the main section.

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22. The method of claim 15, wherein the floor panel comprises a floor board, floor end beams attached to a lower surface of the floor board proximate the ends; and a floor side beam extending between the floor ends beams.

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23. The method of claim 15, and further comprising attaching the floor panel to one of the main beams with a locking mechanism.

24. The method of claim 23, wherein the locking mechanism threadably engages sides of the channel.

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25. The method of claim 23, wherein the locking mechanism is operably attached to the floor panel so that the locking mechanism is operable from an upper surface of the floor panel.

5 26. The method of claim 15, and further comprising attaching at least one leg to the main beam.

27. The method of claim 26, and further comprising attaching a main beam stabilizer to the main beam and the at least one leg.

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28. The method of claim 26, and further comprising attaching a cross beam stabilizer to the cross beam and the at least one leg.